

Docket No. 95-18A2

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Application of:

Thelma G. Manning,
Joseph L. Prezelski,
Sam Moy,
Bernard Strauss,
James Hartwell,
Arpad A. Juhasz
And
Robert J. Lieb

Examiner: Edward A. Miller

Serial No.: 09/665,190

Group Art Unit: 3641

Filed: September 12, 2000

For: HIGH ENERGY THERMOPLASTIC ELASTOMER PROPELLANT

AMMENDMENTS TO THE CLAIMS

Claims 1-5 (cancelled)

Claims 6-12 (withdrawn).

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Claim 13 (currently amended). A process for the preparation of a propellant composition material, comprising the steps of:

a. preparing a first propellant composition by:

heating an energetic oxetane thermoplastic elastomeric binder comprising from about five percent to about thirty percent by weight, based on the total weight of said first propellant, and chosen from the group consisting of 3,3-bis-azidomethyl-oxetane (BAMO), 3-azidomethyl-3-methyloxetane (AMMO), and combinations thereof, to a temperature of about ninety-five degrees Celsius (95° Celsius) or until said elastomeric binder melts, and

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mixing into said elastomeric binder a high energy explosive filler comprising from about seventy percent to about ninety-five percent by weight, based on the weight of said first propellant, and ~~chosen from the group~~ consisting of hexanitrohexaazaisowurtzitane (CL-20), 1,3,3-trinitroazetidine (TNAZ), cyclotrimethylene trinitramine (RDX), and combinations thereof,

to form a first propellant composition having an impetus of at least about thirteen hundred joules per gram (1300 J/g) and a relatively slow burn rate measured at 25 kpsi;

cooling said first propellant composition to a temperature of from about fifty-five degrees Celsius (55° Celsius) to about ninety-one degrees Celsius (91° Celsius) to solidify said first propellant composition;

b. preparing a second propellant composition by:

heating an energetic oxetane thermoplastic elastomeric binder comprising from about five percent to about thirty percent by weight, based on the total weight of said second propellant, and chosen from the group consisting of 3,3-bis-azidomethyl-oxetane (BAMO), 3-azidomethyl-3-methyloxetane (AMMO), and combinations thereof, to a temperature of about ninety-five degrees Celsius (95° Celsius) or until said elastomeric binder melts, and

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mixing into said elastomeric binder a high energy explosive filler comprising from about seventy percent to about ninety-five percent by weight, based on the weight of said second propellant, and chosen from the group consisting of hexanitrohexaazaisowurtzitane (CL-20), and 1,3,3-trinitroazetidine (TNAZ), ~~cyclotrimethylene-trinitramine (RDX)~~, and combinations thereof, to form a second propellant composition having an impetus of at least about thirteen hundred joules per gram (1300 J/g) and a second and relatively fast burn rate on the order of about three times faster than said first burn rate of said first propellant composition as measured at 25 kpsi;

cooling said second propellant composition to a temperature of from about fifty-five degrees Celsius (55° Celsius) to about ninety-one degrees Celsius (91° Celsius) to solidify said second propellant composition;

c. mixing said first propellant composition and said second propellant composition, and extruding the mixture in a desired form.

Claims 14 and 15 (withdrawn).